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Special Industry Analysis  
No. 33

SILK FABRICS

Prepared for the  
Foreign Economic Administration  
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# FOREWORD

This is one of a series of Special Industry Analyses discussing from a commodity or individual industry viewpoint the outstanding items entering into the trade of Japan proper with its Empire and with foreign countries. These analyses are a part of a larger project which includes compilations (annotated) of the imports and exports of Japan proper by sources and destinations; surveys of certain of the colonial areas, emphasizing their Empire and foreign trade and postwar problems relating thereto; an over-all study of the trade of Japan proper; and a survey of Japan's shipbuilding industry and shipping services and requirements in the prewar period. In all of the studies Manchuria has been included as an Empire area owing to the political, economic, and military dominance of Japan in that area, especially during the last decade.

Most of the data in these analyses were taken from official and semi-official Japanese sources. Not only have errors and inconsistencies frequently been detected within individual volumes, but many data from different sources supposedly reporting on the same subject are irreconcilable. It is very likely that large shipments of goods reportedly moving to Kwantung from Japan have been in large part merely transshipments destined for Manchuria.

The present report is one of a number which were prepared during 1944 and 1945 for the Foreign Economic Administration by members of the staff of the United States Tariff Commission. Owing to the desire of the Foreign Economic Administration to obtain this material as promptly as possible, the reports were not reviewed by the Tariff Commission. All statements of fact or opinion in these reports are attributable to the individual staff members who prepared them. The reports were originally intended for confidential use of Government agencies, but are now being made public with the consent of the Foreign Economic Administration.

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SILK FABRICS

Introduction and summary

The silk-weaving industry in Japan is older than that in any other country except China. Formerly a hand-loom industry carried on largely in rural households, it became extensively modernized following the expansion in foreign trade after World War I. In the thirties Japan was the world's largest producer and exporter of silk-woven goods.

Silk fabrics woven in Japan before the war fell into two clearly distinct groups--cloths made primarily for domestic consumption and cloths made primarily for export. Manufacture of each group constituted an almost separate industry with its own organization and methods of production. The group engaged in weaving goods for export was predominantly, though by no means exclusively, a power-loom industry. It produced mainly broad all-silk fabrics averaging 36 inches in width. Several export fabrics were distinctly oriental in type and not directly competitive with the fabrics produced in Occidental countries. They included habutae (popularly called "China silk" in the United States), Fuji cloth (of yarns spun from silk waste) and pongee. Crepe, the most important export cloth made in recent years, is, on the other hand, similar in construction to the crepe produced in the United States and Europe.

The division of the silk-weaving industry engaged in producing fabrics for domestic consumption is still predominantly a hand-loom industry, using mainly narrow looms and producing an extensive variety of native cloths ranging from 8 to 27 inches in width. The output normally included special narrow fabrics such as obiji used as sashes for kimonos.

The silk-weaving industry is concentrated largely in Fukui, Gama, Kyoto, and Ishikawa prefectures. During the period 1933-37 it had an average of 71,000 factories, 260,000 workers, and 330,000 looms in place, including broad and narrow power looms and hand looms. Over 85 percent of the establishments had less than 5 looms each and only about 1 percent had more than 50 looms each. Most of the silk-weaving mills in Japan also produce rayon fabrics interchangeably with silk.

Japan is self-sufficient in raw materials for its silk and rayon-weaving industry. It is the world's largest producer of raw silk, and during 1936-38 was also the leading producer of rayon yarn and staple fiber. It also is an important manufacturer of spun-silk yarn made from waste. Japanese imports are mainly tussah or wild silk from Korea and Manchuria, used for weaving pongees, one of the 4 leading export fabrics.

Quantity data for production are incomplete and in dissimilar units for the various classes of goods. In value the total production of all-silk and silk-mixed fabrics, including broad and narrow goods, averaged 624 million yen during the period 1933-37.

The export trade of Japan in silk fabrics was built up on habutae. Between 1928 and 1937 crepes and Fuji cloth, however, predominated. Total exports, including shipments to all Empire areas, averaged 81 million yen annually in 1933-37, or about 13 percent of production. Exports to Empire areas (principally Korea) were about 15 percent of the total value of exports during this period but increased to 34 percent in 1938 and to 60 percent in 1939.

Woven silk fabrics rank second in importance to raw silk in Japan's export trade in silk and silk manufactures. Exports of all-silk and silk-mixed fabrics averaged about 15 percent of the total exports of silk products during 1937-39, and exports of raw silk about 60 percent; the aggregate value of the Japanese export trade in silk products, including raw silk, cocoons, wastes, semimanufactured silk, yarns, thread, woven fabrics, wearing apparel, and other finished articles averaged 536 million yen, or about 11 percent of the total exports of products of Japanese manufacture to Empire and foreign areas in that period. Imports, principally raw silk and silk waste, averaged 41 million yen, leaving an average annual net export balance in 1937-39 of about 495 million yen. Thus the net credit obtained from exports of silk and silk manufactures exceeded that obtained from the exports of any other comparable category of Japanese goods. (See table 1.)

Whereas the postwar demand for Japanese raw silk in world markets will undergo a drastic reduction as a result of the further inroads of synthetic fibers,<sup>1/</sup> it is unlikely that the market for finished fabrics will be seriously affected by interfiber competition. Although the United States production of silk fabrics declined sharply in the thirties and was small in relation to the production of rayon fabrics, imports of broad silk goods into the United States did not undergo a proportionate decline. Despite the expansion in production of rayon and nylon fabrics forecast for the United States in the postwar period, a substantial volume of silk fabrics will continue to be imported. The volume, however, will depend very largely on the level of national income in the United States, and the existing rates of duty.

Of the total exports from Japan in 1937 and 1938, over 50 percent by volume and over 40 percent by value were shipped to the United Kingdom and British-held areas. The United Kingdom, in most years the largest Occidental market for Japanese silk fabrics, imported a considerable volume of gray-woven broad silks for reexport after further conversion by printing and dyeing. As this so-called "improvement" trade is important to the British textile finishing industry, imports of Japanese silk goods will probably continue to be required. The postwar demand from British dominions and possessions likewise is expected to be maintained at substantially the same level as in prewar years.

<sup>1/</sup> See Japanese Trade Studies, Special Industry Analysis No. 10 - Raw Silk, prepared for Foreign Economic Administration, April 1945.

Table 1.- Japan proper: Exports and imports of silk and silk manufactures,<sup>1/</sup>  
and total export balance in silk products, 1937-39

Item	(In thousands of yen)							
	1937		1938		1939		1937-39	
	Imports	Exports	Imports	Exports	Imports	Exports	Average net exports	
Raw silk (including tussah) -----	25,192	407,118	23,484	364,124	33,208	506,845	399,068	
Cocoons (including doupions) -----	1,714	3,181	2,681	271	3,489	1,720	2/ 904	
Waste silk (including cocoon, mill and rag waste) -----	8,403	4,880	6,933	1,762	12,947	420	2/ 7,074	
Combed silk (peignee) -----		1,084		1,260		744	1,029	
Yarns and thread -----		7,525		4,257		6,218	6,000	
Silk fabrics (except knit) -----	1,393	82,791	1,815	66,006	3,398	91,590	77,927	
Wearing apparel (except knit) -----		10,173		7,346		7,317	8,445	
Knit fabrics and apparel -----		2,939		3,078		3,948	3,322	
Handkerchiefs -----		5,638		2,735		2,940	3,771	
Small wares -----		3,383		2,037		1,553	2,324	
Other manufactures -----		797		423		424	551	
Total -----	36,702	529,509	33,913	453,809	53,042	623,719	494,460	
Export balance -----		492,807		419,896		570,677	494,460	

<sup>1/</sup> Where separately reported in foreign trade statistics of Korea, the data includes exports to and imports from Japan by Korea.

<sup>2/</sup> Includes ribbons, laces, cords, braces and shoe laces.

<sup>3/</sup> Net imports.

Sources: Compiled from annual and monthly returns of the foreign trade of Japan and of Chosen (Korea).

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Description and uses

Woven silk fabrics are produced in a great diversity of types. The purposes for which silk fabrics are used depends upon their width, weight and construction. The bulk of the light and medium weight broad-woven fabrics are employed for wearing apparel and linings. In heavier constructions, silk broad goods are used for upholsteries, draperies and other decorative purposes. Narrower fabrics under 30 inches in width are largely for neckties, umbrellas, handkerchiefs, kimono sashes and many classes of apparel of distinctly oriental type. Silk fabrics have military uses in the manufacture of escape parachutes and powder bags for large caliber ordnance. <sup>1/</sup> Silk fabrics have also a few industrial uses, mainly as bolting cloth in flour mills and as screen-printing materials.

Organization, location, and size of industry

Silk weaving in Japan was for centuries a household enterprise providing a supplemental source of income for the farming population. It remained a handcraft until after the first decade of the present century. Hand looms then began to be replaced by power looms imported from Switzerland, France and Germany. Later the industry was supplied with equipment and appliances of Japanese manufacture. Because of the limited financial resources of the average small weaver, the mechanical looms made in Japan are simpler in construction, less costly, and probably less productive than those used in the United States and Europe.

Despite mechanization, weaving in the old established silk centers has continued to be conducted mainly in small mills. In Japan, as a whole, over 85 percent of the weaving establishments have an average of not more than 5 looms per mill and are in the nature of family shops with meager capital and few employees. Relatively few weaving companies in the industry are integrated for throwing, dyeing, and finishing; large scale operation is mainly in areas where silk weaving is of comparatively recent origin and in areas specializing in the production of export fabrics of a specific type. In 1937 only one weaving mill in Japan had over 7,000 looms; 450 other integrated mills had between 1,000 and 2,000 looms each and over 30,000 spinning and twisting spindles. In that year only about 20 weaving mills, all told, had 300 or more looms; only 10 throwing plants had more than 20,000 spindles.

Although hand-loom weaving is carried out in rural households in all parts of Japan, the power-loom industry is centralized chiefly in the prefectures of Fukui, Ishikawa, Kyoto, Gumma, Niigata and Tochigi. Each of these prefectures has more than 12,000 power looms. The industry is virtually entirely mechanized. It has approximately 60,000 looms and has a few small number of medium and large size mills and a greater production than any other prefecture in Japan. (See table 12 in the appendix.)

<sup>1/</sup> Cartridge cloth for powder bags is made from waste silk reels.

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A trend towards greater employment, more extensive mechanization, and elimination of unproductive establishments has been manifest in the Japanese silk industry since the early thirties. The adoption of rayon, as a supplementary raw material, was the factor most responsible for this development. A reduction of 14 percent in the number of hand looms and 11 percent in the number of establishments occurred in 1932-37, as compared with the preceding 5-year period. Power looms, on the other hand, increased 83 percent, and the labor force 30 percent. By 1938 the industry had 65,000 establishments, 316,000 power looms, 76,000 hand looms, and 305,000 employees. (See table 11 in the appendix.)

#### Raw materials

In addition to raw and thrown silk, the silk weaving industry consumes spun-silk yarn (made from waste silk), rayon-filament yarn, spun rayon yarn (made from staple fiber), and cotton. It is self-sufficient in all of these materials except cotton for use in a small output of silk mixtures. It also must import a class of raw silk called "tussah" obtained from the cocoons of wild (i.e., undomesticated) silkworms which is used for rough, uneven-textured materials, such as pongee. Imports of tussah raw silk, chiefly from Korea, Kwantung and Manchuria averaged 2½ million pounds annually in 1932-37. In the production of the standard variety of raw silk (obtained from the domesticated mulberry-feeding silkworm) Japan has led the world. It was also the world's largest producer of rayon during the 3-year period 1936-38.

The domestic raw silk consumed by the weaving industry consists to a large extent of hand-reeled silk and filature-reeled silk of grades which have been reshipped to the interior, from the ports of Yokohama and Kobe, after having been tested in the silk conditioning houses and found to be inferior for export. The total consumption of raw silk in the manufacture of fabrics for export is estimated to have averaged 14 million pounds annually in 1933-37 or about 40 percent of the total volume of raw silk retained within Japan. (See table 2.)

#### Summary of production, imports, exports and apparent consumption

The total production of silk and silk-mixed fabrics of all widths and types increased steadily after the early 30's, and amounted to 785 million yen at its peak in 1938. Imports have always been a negligible factor in the domestic supply situation. Even at their maximum 3.4 million yen in 1939, they were less than one-half of 1 percent of production. Consumption has thus been virtually confined to goods of domestic manufacture. In value, total exports were 66 million yen, or less than 10 percent of production in 1938, and averaged 81 million yen or 13 percent in 1933-37. (See table 3.)

Table 3.- Silk and silk-mixed fabrics: Summary of production, imports, exports, and apparent consumption, Japan proper, 1928-39

(In thousands of yen)									
Year	Imports				Exports			Apparent consumption	Index of raw silk prices Dec. 1929=100
	Production 1/	From Empire areas 2/	Other	Total	To Empire areas 3/	Other	Total		
1928	540,669	-	131	671	9,284	131,298	140,582	400,218	113
1929	493,850	-	48	48	9,786	146,188	155,975	337,924	112
1930	425,139	-	81	81	5,040	65,594	70,634	354,586	66
1931	406,864	-	86	86	4,997	42,675	47,672	359,278	50
1932	439,019	-	91	91	5,977	49,715	55,692	383,418	60
Average, 1928-32	461,108	-	87	87	7,016	87,094	94,110	367,085	80
1933	501,094	-	48	48	7,512	62,237	69,749	431,393	65
1934	600,870	-	63	63	12,125	74,406	86,531	514,402	45
1935	632,933	3	82	85	14,173	73,293	87,466	545,552	62
1936	663,134	766	118	884	14,986	63,872	78,858	585,160	66
1937	721,448	1,167	226	1,393	13,737	69,054	82,791	640,050	71
Average, 1933-37	623,896	5/ 645	107	495	12,507	68,572	81,079	543,312	62
1938	785,525	1,671	144	1,815	22,197	43,809	66,006	721,334	65
1939	6/	3,390	8	3,398	55,463	36,127	91,590	5/	116

1/ Consists of Broad and narrow fabrics, obijis (sashes) and other special weaves.

2/ Principally from Korea for which data were not separately reported prior to 1936.

3/ Inclusive of Korea, Manchuria and Kwantung; shipments to Formosa and Mandated Islands are not separately classified. 4/ Includes rayon fabrics in 1928 and 1929. 5/ Average only for years indicated.

6/ Not available.

Source: Production data from Japan Financial and Economic Annual. Foreign trade data compiled from official annual and monthly statistics of Japan, and Korea.

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Table 4.- Japan proper: Production of silk and silk-mixed fabrics, 1928-38

(In millions of yen)

Year	Broad fabrics			Narrow fabrics 1/	Obiji (Kimono sashes) 1/	Other narrow fabrics 1/	Grand total 1/
	All- silk	Silk- mixed	Total				
1928	181	24	205	279	45	11	541
1929	194	13	207	238	39	10	494
1930	151	12	163	222	33	7	425
1931	137	11	148	219	32	8	407
1932	176	11	187	210	33	9	439
Average, 1928-32	168	14	182	234	36	9	461
1933	236	15	251	210	29	11	501
1934	273	20	293	249	34	25	601
1935	283	21	304	260	42	27	633
1936	312	23	335	256	46	26	663
1937	367	35	402	247	43	29	721
Average, 1933-37	294	23	317	244	39	24	624
1938	359	35	394	307	47	37	785

1/ Inclusive of all-silk and silk-mixed fabrics. The width of these fabrics is less than 30 inches.

Source: Japan, Financial and Economic Annual, 1940.

Imports

Until the late thirties imports of all-silk and silk-mixed fabrics were negligible and averaged less than 300,000 yen annually. After sharply increasing in 1937, imports rose to a peak of 3.4 million yen in 1939. Compared with exports, however, the import trade in silk fabrics is small.

Table 6.- Silk fabrics: Imports into Japan proper,  
1928-39

Year	From Korea		From other areas 1/		Total
	1,000 sq.yd.	1,000 yen	1,000 yen	1,000 yen	
1928	2/	2/	131		131
1929	2/	2/	48		48
1930	2/	2/	81		81
1931	2/	2/	86		86
1932	2/	2/	91		91
Average, 1928-32	-	-	87		87
1933	2/	2/	48		48
1934	2/	2/	63		63
1935	2/	2/	85		85
1936	770	766	118		884
1937	1,038	1,167	236		1,393
Average, 1933-37	-	-	107		495
1938	1,476	1,671	144		1,815
1939	2,258	3,390	8		3,398

1/ Quantity not reported.

2/ Not separately reported.

Source: Annual and monthly returns of the foreign trade of Japan and of Chosen (Korea).

Table 7.- Silk and silk-mixed fabrics: <sup>1/</sup> Exports from Japan proper to Empire areas and principal foreign markets, 1928-39

Year	Total, (all countries)	Empire areas <sup>2/</sup>			Foreign countries							
		Korea	Kwantung	Manchuria	British India <sup>3/</sup>	United Kingdom	United States	Australia	Union of South Africa <sup>4/</sup>	Straits Settle- ments	Egypt	Other countries
Value (1,000 yen)												
1928 <sup>1/</sup>	140,582	6,529	2,236	519	17,068	9,728	15,403	28,310	6,299	2,503	1,443	50,544
1929 <sup>1/</sup>	155,974	6,024	2,786	976	24,712	10,322	14,699	26,268	5,912	6,065	2,189	56,021
1930	70,634	4,864	170	6	6,247	6,563	6,465	13,615	4,843	799	2,856	24,206
1931	47,672	4,625	370	2	4,990	4,218	4,520	8,733	4,016	595	3,036	12,567
1932	55,692	5,410	563	4	10,398	4,640	3,807	13,720	2,527	781	3,454	10,388
Average, 1928-32	94,110	5,490	1,225	301	12,683	7,094	8,979	18,129	4,719	2,149	2,596	30,745
1933	69,749	6,211	1,197	104	15,254	7,615	5,558	10,795	4,734	1,125	3,314	13,842
1934	86,531	9,043	2,678	404	20,087	10,588	5,258	8,840	4,651	3,396	3,601	17,985
1935	87,466	10,022	3,327	824	18,074	12,069	6,778	6,691	4,008	3,105	2,559	20,009
1936	78,858	10,831	3,474	681	13,203	8,306	7,544	4,076	4,005	3,613	2,333	20,792
1937	82,791	10,505	2,839	393	13,838	9,518	11,531	2,664	3,531	4,597	3,158	20,217
Average, 1933-37	81,079	9,322	2,703	481	16,091	9,619	7,334	6,613	4,186	3,167	2,993	18,569
1938	66,006	16,654	4,049	1,494	7,896	9,023	8,282	1,923	1,454	1,122	1,772	12,337
1939	91,590	44,193	4,914	6,356	5,416	7,541	7,413	1,457	1,069	656	1,704	10,871
Quantity (1,000 square yards)												
1935 <sup>2/</sup>	140,801	9,824	3,730	663	29,178	18,172	17,071	10,202	6,443	4,829	5,250	35,439
1936	131,075	10,107	3,107	555	24,413	13,156	19,339	5,830	6,368	5,954	5,074	37,172
1937	131,173	8,811	1,853	322	25,707	13,491	27,544	3,228	4,958	7,195	5,774	32,290
Average, 1935-37	134,350	9,580	2,897	513	26,433	14,940	21,318	6,420	5,923	5,993	5,366	34,967
1938	106,395	15,743	2,907	1,690	17,755	15,286	23,702	2,404	1,994	1,812	3,391	19,711
1939	90,464	30,798	3,254	4,833	8,560	10,598	13,215	1,553	1,151	798	2,229	13,475

<sup>1/</sup> Includes rayon fabrics prior to 1930.

<sup>2/</sup> Shipments to Formosa are not available; silk fabrics are combined with cotton fabrics in the import statistics of that country.

<sup>3/</sup> Includes Ceylon prior to 1934, and Burma prior to 1938.

<sup>4/</sup> Classified as Cape Colony and Natal in 1928 and Federation of South Africa, 1929-36.

<sup>5/</sup> Quantity data incomplete prior to 1935.

Sources: Compiled from annual and monthly returns of the foreign trade of Japan and of Chosen (Korea).

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Table 8.- Japan: Exports of silk and silk-mixed fabrics <sup>1/</sup> classified by types, 1928-39--Quantity

To all areas except Korea												
Year												
	Crepes	end	habu	Fuji	Pon-	Satins	poplins	emu-	unspeci-	Grand	Korea	Total
ori	tas	cloth	gees	etc.	merated	fabric	total	6/	coun-	tries		
	2/				3/		4/	5/				
In millions of square yards (partially estimated)												
1928 1/	27	50	42	24	8	5	156	8	164	4	168	
1929 1/	26	51	44	26	12	10	169	28	197	4	201	
1930	21	32	31	17	3	7/	104	1	105	4	109	
1931	21	19	18	26	3	7/	87	1	38	4	92	
1932	24	20	30	24	3	1	102	3	105	5	110	
Average, 1928-32	24	35	33	23	5	3	124	8	132	4	136	
1933	29	18	33	31	3	7/	114	5	119	6	125	
1934	43	25	32	22	7	1	130	6	136	9	145	
1935	51	21	23	17	6	3	121	10	131	10	141	
1936	42	27	24	9	6	5	113	8	121	10	131	
1937	41	39	23	11	3	4	121	2	122	9	131	
Average, 1933-37	41	26	27	13	5	3	120	6	126	9	135	
1938	26	40	10	6	3	5	90	1	91	16	107	
1939	15	26	8	3	2	2	56	2	58	31	89	

<sup>1/</sup> Data for countries other than Korea include rayon fabrics not separately reported in 1928 and 1929.

<sup>2/</sup> In 1928-34, estimated from data reported by weight. Habutse exports assumed to average 6-momme in weight (equivalent to 20.2 square yards per pound).

<sup>3/</sup> Includes Kaiki, chiffons, noil cloth and bolting cloth.

<sup>4/</sup> In 1928-34, not reported in quantity. Computed on basis of average annual unit value of the total specified fabrics.

<sup>5/</sup> Partially estimated as explained in footnotes 2 and 4.

<sup>6/</sup> Not classified by types.

<sup>7/</sup> Less than 500,000 square yards.

Source: Compiled from annual and monthly returns of the foreign trade of Japan and Chosen (Korea), except for estimates as noted.

Table 9.- Japan: Exports of silk and silk-mixed fabrics <sup>1/</sup>  
classified by types, 1928-39--Value

To all areas except Korea												
								All				Total
Crepe:								Taffeta	Total	other		To (to
and Habu:	Fuji:	Pon:	Satins:	poplins:	types	unspeci:	Grand:	Korea:	all			
kabe-tae	cloth:	gees:		etc.	enu-	fied	total:	3/	coun-			
ori:					2/	merated:	fabrics:	3/	tries)			
In millions of yen												
1928 <sup>1/</sup>	36	33	36	13	6	4	128	6	134	7		141
1929 <sup>1/</sup>	34	31	36	12	9	7	129	21	150	6		156
1930	22	16	19	6	2	4	65	1	66	5		71
1931	18	7	9	7	1	4	42	1	43	5		48
1932	19	6	15	7	2	4	49	1	50	5		55
Average,												
1928-32:	26	19	23	9	4	2	83	6	89	5		94
1933	25	7	17	10	2	4	61	3	64	6		70
1934	35	8	19	7	4	4	73	4	77	9		86
1935	39	10	14	5	4	1	73	4	77	10		87
1936	31	11	14	3	3	2	64	4	68	11		79
1937	31	17	15	4	2	2	71	2	73	10		83
Average,												
1933-37:	32	11	16	6	3	1	69	3	72	9		81
1938	20	15	7	2	2	2	48	2	50	16		66
1939	14	16	8	1	3	2	44	4	48	44		92

<sup>1/</sup> Data for countries other than Korea include rayon fabrics not separately recorded in 1928 and 1929.

<sup>2/</sup> Includes kaiki, chiffons, noil cloth and bolting cloth.

<sup>3/</sup> Not classified by types for Korea.

<sup>4/</sup> Less than 500,000 yen.

Source: Compiled from annual and monthly returns of the foreign trade of Japan and Chosen (Korea).

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Table 10.- Broad-woven, all-silk fabrics: Comparison of average annual production and exports, Japan proper, by types, in period 1933-37

Item	Production 1/	Exports 2/	Ratio of exports to production
	Quantity		
	Million sq. yd. 3/	Million sq. yd.	Percent
Crepe and Kabe-ori -----	198	41	20.8
Fuji cloth -----	57	27	47.0
Habutae -----	103	26	25.3
Satin -----	85	5	6.0
Pongee -----	28	18	63.1
Total specified -----	471	117	24.8
Other (unenumerated) -----	4/ 338	5/ 18	5.3
Grand total -----	6/ 809	6/ 135	16.7
Value			
	Million yen	Million yen	Percent
Crepe and Kabe-ori -----	85	32	38.0
Fuji cloth -----	28	15	56.6
Habutae -----	26	11	41.0
Satin -----	26	3	11.9
Pongee -----	8	6	67.8
Total specified -----	173	67	38.9
Other (unenumerated) -----	7/ 121	5a/ 14	11.6
Grand total -----	294	81	27.6

1/ Production of all-silk broad-woven goods only; silk-mixed broad goods not reported in quantity.

2/ Exports include an unspecified amount of silk mixtures and narrow fabrics assumed to be small.

3/ Converted from meters shown in table 5 assuming width to average 36 inches.

4/ Estimated as explained in footnote to table 9.

5/ Includes (a) exports to Korea of fabrics not specified by types; (b) exports to other countries partially estimated for portion of period (1933-34) when quantity reported is incomplete.

6/ Partially estimated.

7/ Partially estimated as explained in footnote to table 8.

Source: Computed from data in Japan Yearbook and annual returns of the foreign trade of Japan.

### Consumption

Specific types of silk broad-woven goods are made largely for export. On a value basis over half of the Fuji cloth and two-thirds of the pongee produced during 1933-37 were exported, together with about 40 percent of the habutae and 38 percent of the crepes. Other broad-woven silk fabrics, not specified by type, were, on the other hand, mainly consumed within Japan.

Silk and silk-mixed narrow-woven goods, including obijis, for kimono sashes, and other special fabrics, which constituted about half of the value of the total production in 1933-37 were almost wholly for domestic consumption.

The value of the combined consumption of both broad and narrow silk fabrics, including specialties, averaged 87 percent of the aggregate value of the silk fabric production in Japan in 1933-37, as compared with 80 percent in the preceding 5-year period. Although consumption cannot be computed on a volume basis because of the incomplete quantity data on production, the value figures show a strong upward trend throughout the thirties. Consumption rose from 355 million yen in 1930 to 721 million yen in 1938. (See table 3.) This expansion in value reflects a large increase in volume of consumption as the annual average price of raw silk throughout this period (except 1937) was lower than in 1930.<sup>1/</sup>

<sup>1/</sup> See Japan Trade Study, Special Industry Analysis No. 1 - Raw Silk, prepared for Foreign Economic Administration, April 1945.

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## APPENDIX

Table 11.- Japanese silk and rayon weaving industry: Number of factories, looms and operatives, 1928-38.

Year	(Number)					Operatives
	Factories	Power <sup>1/</sup>	Looms Hand	Total		
1928 -----	84,348	111,104	106,945	218,049	:	217,631
1929 -----	83,107	125,849	99,190	225,039	:	215,925
1930 -----	79,864	133,244	92,944	226,188	:	206,542
1931 -----	77,723	144,802	89,641	234,443	:	213,285
1932 -----	72,448	160,475	85,214	245,689	:	224,561
Average, 1928-32--	79,498	135,095	94,787	229,882	:	215,589
1933 -----	71,273	176,289	84,089	260,378	:	236,997
1934 -----	72,907	216,731	84,990	301,721	:	267,345
1935 -----	72,311	251,977	82,868	334,845	:	290,912
1936 -----	72,599	287,842	81,477	369,319	:	310,359
1937 -----	65,552	305,744	73,470	379,214	:	294,292
Average, 1933-37--	70,928	247,717	81,379	329,095	:	279,981
1938 -----	65,229	315,636	75,650	391,286	:	304,932

<sup>1/</sup> Including broad and narrow looms.

Source: Financial and Economic Annual of Japan, 1940; Japan-Manchoukuo Year Book, 1940.

Table 12.- Japan proper: Principal silk and rayon weaving prefectures,  
classified by number of mills and looms in place in 1934

Prefecture	Number of mills having—			Total number of looms in place			
	Less than	10 - 50	Over 50	Total	Power	Hand	Total
	10 looms	looms	looms				
Fukui	795	1,261	250	2,306	59,000	500	59,500
Ishikawa	220	566	127	913	26,300	-	26,300
Gumma	16,486	602	48	17,136	21,400	18,000	39,500
Kyoto	8,625	498	30	9,153	21,700	11,600	33,300
Niigata	1,654	362	58	2,074	13,300	1,700	15,000
Tochigi	2,942	466	21	3,429	12,800	2,700	15,500
Tokyo	2,771	347	12	3,130	9,204	3,950	13,154
Yamanashi	2,474	130	-	2,604	7,600	900	8,500
Yamagata	2,136	200	24	2,360	6,200	2,600	8,800
Total, including others	66,525	5,691	691	72,907	216,700	35,000	301,700

Source: Japan Silk Yearbook, 1935-36.

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FOREWORD

This is one of a series of Special Industry Analyses discussing from a commodity or individual industry viewpoint the outstanding items entering into the trade of Japan proper with its Empire and with foreign countries. These analyses are a part of a larger project which includes compilations (annotated) of the imports and exports of Japan proper by sources and destinations; surveys of certain of the colonial areas, emphasizing their Empire and foreign trade and postwar problems relating thereto; an overall study of the trade of Japan proper; and a survey of Japan's shipbuilding industry and shipping services and requirements in the prewar period. In all of the studies Manchuria has been included as an Empire area owing to the political, economic, and military dominance of Japan in that area, especially during the last decade.

Most of the data in these analyses were taken from official and semi-official Japanese sources. Not only have errors and inconsistencies frequently been detected within individual volumes, but many data from different sources supposedly reporting on the same subject are irreconcilable. It is very likely that large shipments of goods reportedly moving to Kwantung from Japan have been in large part merely transshipments destined for Manchuria. In addition, the data probably exclude shipments of commodities made to and from Empire areas for military purposes.

The present report is one of a number which were prepared during 1944 and 1945 for the Foreign Economic Administration by members of the staff of the United States Tariff Commission. Owing to the desire of the Foreign Economic Administration to obtain this material as promptly as possible, the reports were not reviewed by the Tariff Commission. All statements of fact or opinion in these reports are attributable to the individual staff members who prepared them. The reports were originally intended for confidential use of Government agencies, but are now being made public with the consent of the Foreign Economic Administration.

## COTTON TEXTILES

Introduction and summary

Of the total of all kinds of textiles produced in Japan proper (value of production 4.0 billion yen in 1938 and 4.8 billion yen in 1939) cotton textiles was the most important in both value of products and the number of persons employed. In the years just preceding World War II Japan was among the three most important cotton-textile producing countries of the world. It ranked third in the number of cotton spinning spindles, second in the amount of cotton consumed, and first as an exporter of cotton cloth; this, despite the fact that Japan is dependent almost entirely on foreign sources for its supply of raw cotton, importing it chiefly from India and the United States.

Although Japan's first cotton mill was established in 1866, the industry made slow progress until about 1890, when there were reported 278,000 spindles and 400 power looms. The number of spindles amounted to about 1.3 million in 1900, increasing thereafter to a peak of 12.8 million in 1938. The Department of Commerce and Industry reported about 400,000 looms in 1938.

Although exports of cotton yarn were greater than imports, they usually amounted to only about 3 percent of production. Exports of cotton yarn totaled about 365,000 piculs and imports about 94,000 piculs in the period 1933-37; the value of the exports averaged 42 million yen. The trade in yarn--both imports and exports--was about equally divided between Empire areas and foreign countries until 1936, when exports to foreign countries increased rapidly, in order to gain foreign exchange, and exports to Empire areas were deliberately reduced by the Government to keep imports of raw cotton as low as possible. Most of the exports to Empire areas were to Korea and Manchuria, while the principal foreign markets were British India and the Netherlands Indies.

Of the output of cotton cloth, however, Japan has exported the greater proportion, ranging from 55 to 75 percent in recent years. Exports of cotton blankets, towels, and tablecloths have also represented a large part of their output. From 1933 to 1938 the exports of cotton fabric ranked first in value among the exports of principal commodities and ranked second to raw silk exports in other years, including 1939. Total exports of cotton cloth were valued at about 525 million yen in the period 1933 to 1937. In this period only about one-fifth of the exports were to Empire areas, chiefly Korea and Manchuria and the remainder went to foreign countries, most outstanding of which were British India, Netherlands Indies, and Egypt, although substantial exports of cotton cloth from Japan were made to a great number of countries throughout the world. The largest market of Japan was, however, concentrated in the Asiatic area, where the proximity to markets and the low cost of Japan-made textiles encouraged sales in competition with Western producers. As was the case with yarn, exports to Empire areas declined as a result of efforts to reduce imports of raw cotton into Japan and to conserve foreign exchange.

the industries within these countries to reduce imports of foreign manufactures and because of pressure from the major textile exporting countries of the world, the Japanese cotton textile industry may well be faced with severely shrunken markets.

While the export of cotton manufactures may not have yielded a very large net credit for Japan in some years, it nearly always covered the cost of cotton imported from abroad for domestic consumption. If exports of cotton manufactures are severely reduced in the postwar period, it is doubtful whether Japan will have sufficient foreign exchange with which to purchase raw cotton or better textiles for use within the country. It may become necessary to severely restrict such imports and encourage the manufacture of textiles for domestic consumption which can be made from raw materials available to a large extent within the country.

Before the war Japan required approximately 4 million spindles to process raw cotton for domestic consumption. (See table 10.) There are preliminary reports that the number of cotton spindles in Japan has been reduced from the prewar level of 10 to 12 million to approximately 3½ million, as a result of air-raid damage, scrapping (for metal content of machinery), shipments of machinery to the continent, and depletion. If this is the case, the spindles available within the country may be required to supply a minimum of textile fabrics for use in Japan whether the fiber processed be cotton, staple fiber, spun silk, or wool. The problems of the exportation of textile manufactures from Japan in competition with exports from Western countries would, therefore, probably not occur because of the lack of textile machinery facilities within Japan and the continuing serious shortage of such machinery throughout the world within the next four or five years.

#### Cotton Yarn

The production of cotton yarn in Japan consists chiefly of coarse and medium count yarns which are used almost entirely in the manufacture of cloth, knit goods, cords and twine, and various other products. About 60 percent of the yarns are coarser than 23s and 95 percent coarser than 45s. Less than 4 percent of the total output is exported. Of the small imports of cotton yarn China and Kwantung have been the chief sources, with some from Great Britain.

A total of 70 to 75 companies have controlled the cotton yarn. With few exceptions these companies are members of the Japan Cotton Spinners' Association. Although the number of spindles, since 1925, has more than doubled, the number of companies has remained about the same through the expansion of large mills and their absorption of small companies. Thus the spinning industry has been concentrated under the control of a few companies which also have expanded their activities to a more complete vertical integration.

Summary of present supply

In the production of cotton yarn (and piece goods) Japan is second to the United Kingdom in the period 1933-37, ranking second to the United States. In 1938 and 1939, however, it was outranked by India. The output reached a peak of about 1.6 billion pounds in 1937. Both imports and exports are, relatively to yarn consumption, small.

Production

The production of cotton yarn in Japan is mainly for home consumption to be used principally in weaving and knitting for domestic consumption or export (see table 10). The coarser yarns are made largely from Indian cotton and the medium counts from American and, in later years, Brazilian cotton. The small output of fine yarn is made from Egyptian cotton. Production of cotton yarn, by yarn groups, in the period 1929-39, is shown in table 4.

Table 3.- Cotton yarn: Summary of Japanese production, imports, and exports, and apparent consumption, 1928-39

Year	Imports from-		Exports to-		Apparent consumption
	Production	Empire <sup>1/</sup> areas	Other	Empire <sup>1/</sup> areas	Other
Quantity (100 kin)					
1928	7,355,586	76	10,916:123,908	170,832	7,071,838
1929	8,377,758	5,163	10,555:102,871	172,254	8,118,351
1930	7,574,097	11,100	16,059: 97,389	156,740	7,347,127
1931	7,701,399	90,091	256,520: 83,435	86,043	7,878,532
1932	8,431,311	55,103	30,660:147,662	244,272	8,125,140
Average, 1928-32	7,888,030	32,307	64,942:111,053	166,028	7,708,197
1933	9,299,568	65,808	111,096:138,111	104,819	9,233,542
1934	10,387,326	65,426	98,131:192,903	153,123	10,204,857
1935	10,677,153	31,060	22,763:175,366	232,812	10,322,798
1936	10,821,588	32,339	11,008:149,835	251,451	10,463,649
1937	12,031,728	27,869	6,519:135,804	293,693	11,636,619
Average, 1933-37	10,643,473	44,500	49,903:158,404	207,180	10,372,293
1938	8,577,066	3,434	2,981: 54,158	280,415	8,248,908
1939	8,019,139	n. a.	2,400: 79,201	549,492	7,392,896

<sup>1/</sup> Does not include Formosa, for which data are not available by quantity.

Source: Production - Japan Year Books.

Imports and exports - official annual and monthly statistics of Japan and Korea.

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Table 4.- Cotton yarn: Production in Japan, by yarn groups, 1929-39

Year	Under 19s.	20s - 22s	23s - 44s	45s and over	Total
	Quantity (1,000 bales) <sup>1/</sup>				
	:Percent : :of total:	:Percent : :of total:	:Percent : :of total:	:Percent : :of total:	
1929	29.6 : 827.4	31.5 : 878.4	35.3 : 985.0	3.6 : 101.8	2,792.6
1930	30.9 : 780.5	32.0 : 808.6	33.1 : 834.4	4.0 : 101.2	2,524.7
1931	31.6 : 809.8	31.3 : 803.4	31.7 : 814.4	5.4 : 139.5	2,567.1
1932	28.6 : 797.2	32.1 : 896.9	33.6 : 937.9	5.7 : 158.4	2,790.4
1933	28.3 : 877.0	30.3 : 941.1	37.0 : 1,146.0	4.4 : 136.7	3,100.8
1934	27.7 : 962.1	31.7 : 1,100.9	37.6 : 1,305.4	3.0 : 104.0	3,472.4
1935	28.1 : 999.3	28.8 : 1,026.0	39.7 : 1,412.9	3.4 : 122.6	3,560.8
1936	28.2 : 1,015.6	28.5 : 1,027.3	39.5 : 1,425.6	3.8 : 138.9	3,607.4
1937	27.8 : 1,101.9	29.4 : 1,167.0	39.1 : 1,549.2	3.7 : 148.1	3,966.2
1938	27.5 : 786.8	29.8 : 850.5	38.5 : 1,101.5	4.2 : 120.2	2,859.0
1939	26.6 : 693.6	30.5 : 794.3	37.0 : 964.1	5.9 : 153.7	2,605.7

<sup>1/</sup> One bale is equivalent to 3 piculs or 396.8 lbs.

Source: Japan-Manchukuo Year Books.

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Trade in cotton yarn

Japan's trade in cotton yarn is small in comparison with its production. Imports represented about one percent of production in the period 1928-39, while exports represented about 3.5 percent. Imports were mainly coarse and medium yarns from China and Kwantung and small quantities of fine yarns from Great Britain. Exports were shipped principally to British India, Korea, Manchuria, and the Netherlands Indies. (See table 5.) Although exports of cotton yarn represented less than 4 percent of production, they ranked, in value, among the first ~~six~~ commodities exported from Japan in recent years.

Cotton Manufactures

Of the total output of cotton manufactures produced in Japan before the war, that of cotton piece goods was by far the most important. In the years 1933-38 cotton cloth was Japan's chief export item, but ranked second to raw silk in other years. The cloth was woven in mills affiliated with the Japan Cotton Spinners' Association and also in a large number of small independent weaving mills which purchased the yarn from association mills. The weaving industry was not as fully developed as spinning, largely because it was less modernized; about two-thirds of the looms were nonautomatic power looms and hand looms. Member mills of the Association operated 114,000 power looms in 1938 of which probably not more than 40,000 were automatic. Most of the fabric woven on the association looms was produced for export, while the output of power looms in independent mills was both for export and home consumption; most of the hand-loom products were for home consumption. Beginning in 1938 cotton cloth for home consumption was required, by law, to contain at least 30 percent staple fiber. Since imports of raw cotton during the war were reduced to a minimum, the output of cloth by the cotton goods industry probably consisted of cloth wholly of staple fiber and of cloth containing a large proportion of this fiber.

Table 5.- Cotton yarn: Exports from Japan to principal countries, 1928-39

Year	: British : India 1/	: Netherlands: : Indies	: Hong : Kong	: Manchuria	: Korea	: Other 2/	: Total
	Quantity (100 kin)						
1928	51,781	8,627	47,765	36,355	79,771	70,441	294,740
1929	82,541	7,203	20,965	23,360	72,920	68,136	275,125
1930	60,118	5,754	39,523	15,600	75,281	57,853	254,129
1931	48,596	5,441	7,258	4,033	74,301	29,849	169,478
1932	152,986	21,978	24,504	13,373	123,118	55,975	391,934
Average, 1928-32	79,204	9,801	28,003	18,544	85,078	56,451	277,081
1933	55,296	11,953	3,426	33,638	98,014	40,603	242,930
1934	72,955	13,556	1,059	36,189	151,493	70,774	346,026
1935	134,641	39,564	10,555	50,826	118,429	54,163	408,178
1936	126,528	46,147	20,349	74,863	69,713	63,686	401,286
1937	110,657	92,138	31,259	82,727	40,305	72,411	429,497
Average, 1933-37	100,015	40,672	13,330	55,649	95,591	60,327	365,584
1938	141,614	67,553	7,326	32,569	18,778	66,733	334,573
1939	214,935	144,191	73,501	48,832	2,444	144,790	628,693
	Value (1,000 yen)						
1928	9,178	827	4,193	3,489	7,167	9,463	34,317
1929	13,447	769	2,118	2,406	6,519	9,544	34,803
1930	6,574	445	2,592	1,073	4,841	5,488	21,013
1931	5,590	356	447	250	4,069	2,790	13,502
1932	14,341	1,442	1,336	934	5,685	4,479	28,417
Average, 1928-32	9,826	768	2,137	1,630	5,696	6,353	26,410
1933	7,603	1,234	269	3,098	5,993	4,877	23,094
1934	11,112	1,695	129	3,632	9,491	8,512	34,571
1935	20,093	4,403	944	4,628	9,621	7,184	46,873
1936	18,051	5,489	1,840	6,391	5,738	7,985	45,494
1937	19,846	13,790	3,625	3,334	3,828	10,897	60,320
Average, 1933-37	15,341	5,322	1,365	5,217	6,934	7,892	42,071
1938	20,575	7,583	642	3,232	1,775	8,488	42,295
1939	28,959	14,094	5,010	6,671	305	16,356	71,395

1/ Includes Ceylon before 1934, and Burma before 1938.

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2/ Excludes exports to Formosa for which data are not available.  
3/ Not reported.

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#### Summary of production, imports, exports, and apparent consumption

Cotton cloth available for consumption in Japan in the period 1929-39 varied considerably, depending largely on the amount exported. Production reached a peak of 4.2 billion yards in 1937, declining to 3.0 billion yards in 1939. Exports averaged over 2.7 billion square yards annually in the years 1933-37, but declined to 2.3 billion yards in 1938 and amounted to 2.5 billion yards in 1939. The quantity available for home consumption averaged about 1.3 billion yards in the period 1933-37, declining to less than 600 million yards in 1939.

Imports of cotton cloth amounted to less than 1 percent of production, whereas exports in the period 1929-39 amounted to about 55 percent of production in 1931 and 80 percent in 1939, averaging approximately 69 percent for the period. Of the total exports of cotton cloth from 1928 to 1939, from 10 to 18 percent was shipped to Empire areas; less than 2 percent was exported to these areas in 1939. The bulk of exports of cotton cloth was shipped to British India, Netherlands Indies, China, and Manchuria, with substantial quantities going to Egypt, Straits Settlements, Philippine Islands, and Kwantung. A summary of production, imports and exports is shown in table 6.

#### Cotton cloth production

The output of cotton cloth in Japan increased through the 1920's to reach a peak of 4.2 billion yards in 1937. Production by kinds of fabric, according to annual censuses taken by the Japanese Government, is shown in two groups, namely, wide fabrics reported in meters and narrow fabrics reported in rolls. Totals in recent years are reported in value only. The principal fabrics are listed as shirtings, drills and jeans, striped and colored cloths, sheetings, flannels and T-cloths. (See table 7.)

Analysis of the yarn data indicates a shift toward greater output of finer yarn and consequently finer cloth. The output of shirting, for example, showed a more rapid advance than other fabrics. "Shirtings" as used in Japanese statistics covers a wide variety of plain-woven fabrics made from the finer yarns. Such fabrics include print cloths, broadcloths, cambric, lawns, and similar types. Sheetings, on the other hand, include fabrics made from coarser yarns, such as bag fabrics and coarse sheeting. Most of the output of wide cloths is made for export.

Table 7.- Cotton cloth: Total production in Japan proper, by classes,  
in specified years, 1929 to 1938

Class	1929	1931	1933	1935	1937	1938
Quantity (1,000 meters)						
Wide cloths:						
Shirtings	900,898	789,842	1,268,303	1,425,751	1,573,542	1,180,682
Drills and jeans	595,176	437,802	597,596	613,532	730,341	581,835
Striped and colored	59,066	162,369	333,149	473,736	439,724	257,948
Sheetings	270,247	280,366	346,877	345,192	258,619	193,564
Flannels	204,786	169,536	178,114	308,583	259,625	130,356
T-cloths	171,122	175,596	270,222	276,961	233,003	175,260
Sateens	218,324	143,665	133,998	103,198	84,858	70,007
Velveteens	38,448	24,305	30,272	47,953	67,392	42,989
Crepes	82,828	81,947	82,285	47,178	34,893	20,718
Duck	21,790	25,177	29,407	27,647	44,633	30,598
Kokura	-	-	-	76,982	77,037	38,350
Other gray or bleached	88,958	75,206	203,491	1/	1/	1/
Total (1,000 meters)	2,651,643	2,365,811	3,473,714	1/	1/	1/
Total (1,000 yen)	555,445	314,086	580,839	731,695	865,963	677,478
Quantity (1,000 rolls)						
Narrow cloths:						
White tissues	96,875	88,919	78,143	82,232	78,974	37,986
Striped tissues	32,404	25,616	19,106	15,486	15,529	8,296
Figured tissues	12,247	10,215	6,844	6,208	5,101	3,195
Colored tissues	6,773	5,550	4,685	5,347	4,584	2,981
Crepes	663	972	1,031	1,125	336	327
Total (1,000 rolls)	148,962	161,272	109,809	1/	1/	1/
Total (1,000 yen)	148,766	84,227	80,035	88,315	96,453	72,632

1/ Quantities not reported.

Source: Japan-Manchukuo Year Books.

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### Imports

Imports of cotton cloth into Japan have never been large, amounting to less than 1 percent of production. Until recently imports have been mainly fine cloths and specialties from Great Britain and Switzerland, but these declined from about 14 million square yards in 1929 to less than one million in 1937 and to 34 thousand in 1939. Imports from Empire areas, chiefly Korea, increased from less than one million square yards in 1929 to nearly 30 million in 1939 probably because of increased number of Japanese-controlled mills in those areas, and the effort made in prewar years to reduce exchange expenditures for raw cotton by using Korean cotton for textiles consumed in Japan. The trend of imports, by Empire and other areas, in the period 1928 to 1939, is shown in table 6 above.

### Exports

Although the Japanese cotton-textile industry had been undergoing expansion for several years, its most notable progress was made during and after World War I. The industry not only augmented its spindleage and made huge profits, but Japan increased its export volume of cotton goods and secured footholds in a number of markets to which it had no access before the First World War. So great was this rise that by 1933 Japan had displaced the United Kingdom as the world's leading exporter of cotton cloth. In general, Japan penetrated into virtually every market of the world where cotton goods were sold, including countries with high standards of living. In the growth of its exports Japan first became entrenched in the Asiatic Markets, later expanding into African and Latin American markets. (See table 9.)

The cotton cloths exported from Japan were predominantly those made on power looms, and the expansion of exports has been coincident with the development of the cotton mill industry in Japan. (See table 2.) A measure of the expansion of Japan's export trade is indicated in table 8, showing the value of exports over a period of years.

Exports of cotton cloths from Japan are predominantly colored goods, such as prints, jeans, and shirtings. Of the total exports of cotton cloth in the decade 1930-39 colored goods averaged about 46 percent of the quantity and 53 percent of the value. Gray cloths (not bleached) accounted for 35 percent of the quantity and 30 percent of the value. The principal markets have been China, Manchuria, India, and the Netherlands Indies. Other important markets include Egypt, Straits Settlements, Kwantung, and the Philippine Islands. (See table 9.)

PURL: <http://www.legal-tools.org/doc/12128c/>

Table 9.- Cotton piece goods: Exports from Japan to principal markets other than Formosa <sup>1/</sup>, 1928-39

Year	British India	Manchuria	Kwantung	Korea	Netherlands Indies	China	Egypt	Straits Settlements	Philippine Islands	United States	Other	Total
Quantity (million square yards)												
1928	357.7	2/	53.7	169.1	172.7	3/ 532.3	77.6	15.9	31.0	1.1	176.7	1,587.9
1929	581.7	2/	56.4	143.5	193.6	3/ 531.9	107.5	29.6	26.7	.6	262.8	1,934.3
1930	404.2	2/	45.4	166.0	182.9	3/ 436.4	109.0	44.5	35.1	.4	313.9	1,737.8
1931	404.4	2/	37.9	162.9	212.1	3/ 239.5	103.8	41.3	33.4	.5	340.8	1,576.6
1932	644.7	15.2	88.8	196.1	353.3	187.4	195.5	82.2	21.4	1.6	443.7	2,229.9
Average, 1928-32	478.5	3.0	56.5	167.5	222.9	385.5	118.7	42.7	29.5	.8	307.7	1,813.3
1933	451.6	91.9	86.0	215.3	423.1	113.2	210.4	95.8	34.9	7.5	575.8	2,305.5
1934	410.5	170.4	83.6	208.0	441.0	59.4	233.7	91.0	75.7	17.4	994.5	2,785.2
1935	556.2	161.3	68.1	174.6	370.5	56.0	163.7	44.8	87.5	48.3	1,168.7	2,899.7
1936	479.7	223.8	127.1	163.5	351.7	37.3	106.1	48.4	44.3	73.4	1,218.1	2,873.4
1937	331.2	212.2	117.6	135.1	434.4	45.1	49.7	51.8	54.2	123.8	1,223.4	2,778.5
Average, 1933-37	445.8	171.9	96.5	179.3	404.1	62.2	152.7	66.3	59.3	54.1	1,036.3	2,728.5
1938	469.9	135.2	58.3	93.0	246.4	110.6	21.4	26.3	32.7	16.1	1,063.9	2,273.8
1939	476.0	7.7	15.1	18.0	368.7	22.9	37.3	29.6	37.0	71.5	1,379.8	2,463.6
Value (million yen)												
1928	70.2	2/	15.1	42.8	39.3	3/ 156.5	17.6	3.5	6.8	.2	41.0	395.0
1929	109.1	2/	15.3	36.0	42.3	3/ 150.1	24.4	5.8	5.6	.1	59.9	448.6
1930	61.2	2/	9.2	31.4	28.3	3/ 86.9	20.5	6.3	5.4	.1	54.2	303.5
1931	49.8	2/	6.1	23.5	28.3	3/ 43.0	14.9	5.2	4.1	.1	47.2	222.2
1932	80.6	3.2	16.1	30.0	50.2	37.1	27.0	11.2	2.8	.2	60.3	318.7
Average, 1928-32	74.2	.6	12.4	32.7	37.7	95.1	20.9	6.4	4.9	.1	52.6	337.6
1933	71.4	21.6	18.8	43.8	78.2	25.6	38.3	17.6	5.8	1.3	104.6	427.0
1934	66.8	40.2	19.2	44.2	82.8	13.0	46.8	17.4	13.2	2.8	190.1	536.5
1935	85.2	35.7	15.2	36.3	66.6	11.9	31.7	8.5	14.5	8.2	218.6	532.4
1936	72.5	47.2	28.3	32.1	55.4	7.9	20.5	9.2	7.7	13.8	221.1	515.7
1937	63.0	55.7	29.4	32.4	85.6	11.3	10.5	12.2	12.1	22.2	271.0	605.4
Average, 1933-37	71.8	40.1	22.2	37.8	73.7	13.9	29.6	13.0	10.6	9.6	201.1	523.4
1938	67.9	38.0	17.4	25.6	39.5	23.9	3.3	5.1	6.1	2.4	200.7	429.9
1939	62.4	4.5	5.2	10.1	53.2	10.9	5.8	5.5	6.0	10.2	240.3	414.1

<sup>1/</sup> Data for Formosan imports of cotton piece goods are not separately reported.<sup>2/</sup> Not separately recorded; included with China.<sup>3/</sup> Includes Manchuria.

Source: Annual Return of the Foreign Trade of Japan, Tables of the Trade and Shipping of Chosen (Korea).

Table 10.- Cotton and cotton manufactures: Production, net exports, and consumption in Japan proper, and related data, 1928-39

Year	Cotton textiles (in terms of yarn equivalent)										Raw cotton	
	Net exports as--					Consumption		Spindles		Looms		necessary to operate required
	Raw cotton	Pro-	Yarn	Cloth	articles	Quantity	Percent	in place	in place	for home consumption	for home consumption	
	consumption	duction	Finished	of	of	produc-	tion					
In millions of pounds										In thousands		Million pounds
1928	1,140	973	38 : 1/2	423 : 2/	60	452	46.5	6,467	370	3,607	175	530
1929	1,304	1,109	34 : 1/2	516 : 2/	65	493	44.5	6,836	363	3,042	165	520
1930	1,171	1,002	30 : 1/2	464 : 2/	70	438	43.8	7,214	349	3,162	155	513
1931	1,202	1,019 : 3/4	23 : 1/2	420 : 2/	75	547	53.7	7,535	342	4,046	185	645
1932	1,293	1,115	40	571 : 2/	80	424	38.0	7,965	352	3,527	155	491
Average, 1928-32	1,222	1,043	23	479 : 2/	70	471	45.1	7,203	355	3,255	160	551
1933	1,419	1,230	9	592 : 2/	90	539	42.9	8,644	363	3,795	160	623
1934	1,589	1,374	24	721 : 2/	100	509	37.1	9,531	377	3,536	140	590
1935	1,656	1,412	47	770 : 2/	110	485	34.4	10,197	386	3,508	135	570
1936	1,676	1,431	47	763	125	496	34.7	10,990	395	3,313	100	582
1937	1,851	1,591	52	750	145	644	40.5	12,191	407	4,937	145	712
Average, 1933-37	1,634	1,408	36	723 : 2/	114	555	38.0	10,310	385	3,918	150	621
1938	1,309	1,134	43	701	90	300	26.4	12,776	387	3,373	102	345
1939	1,217	1,061	83	699	62	217	20.4	11,603	—	2,367	100	248

1/ Estimates based on cotton cloth exports, 3.75 yards a pound.

2/ Estimates based on relation of exports 1936-39 to cotton consumption and other factors.

3/ Net imports.

Source: Japan Year Book and Annual Returns of Foreign Trade of Japan.